

Used principally for
main headings, this
bold-face type also
is used for bulletins
GOTHIC No. 434B

Combining compactness with
legibility, this face serves
a number of purposes. Where
the conservation of space is
highly important, as in foot-
notes, explanatory matter,
etc., this type excels. Forms
requiring columnar headings
may be done with this face
GOTHIC No. 180

A good print face type which
may be used at a very compact
horizontal spacing. Also has
matching capitals which are
useful for headings for para-
graphs.
CASLON No. 300

Wherever emphasis is needed
this type serves the purpose.
It may well be used for foot-
notes, explanatory matter or
any place where *italic*
type is indicated.
MINIATURES No. 211

Three purposes this type
serves well. It is used ex-
tensively for body copy,
the capitals for headings,
and the extremely legible
figures for statements.
GOTRAN No. 225-8-14

A beautiful, modern
lino type, which also
writes well at Pica
spacing. Especially
suitable for body copy
or for correspondence
VIENNESE No. 232

One of the four of the Pres-
ident family of Vari-Typer
faces, this type is espe-
cially adaptable for the
reproduction of copy for Du-
pli-Plate or Photo-Offset
RESIDENT No. 250-7-12

FOR FORMS AND STATEMENTS
THIS **GOTHIC** FACE, WITH
ITS TWO UPPER CASE FONTS,
IS INVALUABLE. WHEN USED
IN CONJUNCTION WITH 229
AND 180 ANY FORM MAY BE
GOTHIC No. 27P

This type face was de-
signed to fill the need
for a good Print face
which would reduce to
various point sizes for
use in Photo-Offset.
MANHATTAN No. 224

An excellent type for
headings, subheadings,
or for any bold faced
effect in copy. Repro-
duces well in all the
various processes.
GOTHIC No. 229



CARE AND OPERATION

Of The



ELECTRIC COMPOSING TYPE WRITER

ALL LANGUAGES TYPEWRITER CO.
119 W. 23rd St. New York 11, N.Y.
CHelsea 3-8086

Book Copyrighted by Manufacturer
April 1940

RALPH C. COXHEAD CORPORATION

333 SIXTH AVENUE, NEW YORK, N. Y.



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FOREWORD

The Vari-Typer is as easy to operate as an ordinary typewriter. It is the finest and most unusual writing machine in existence.

The Vari-Typer is a composing Type Writer with changeable faces and spaces. It has a Universal typewriter keyboard. There are more than 300 type faces available.

Read carefully the instructions in this book and refer to them as often as you find necessary. We have tried to make our instructions as clear and as brief as possible. The more you learn about your Vari-Typer the better your work will be. If you find any special problem in your work that is not covered by these pages, write to the School of Vari-Typography, Ralph C. Coxhead Corporation, 333 Sixth Avenue, New York City. State your problem simply and completely. Enclose samples of your work that you are asking about. Write as often as you wish. This service is free to all users of the Vari-Typer.

1. Connect Electric Cord

The Vari-Typer is equipped with a Universal 110-volt motor, which will operate on AC or DC current. For 220 volts, a 220-volt motor must be used.

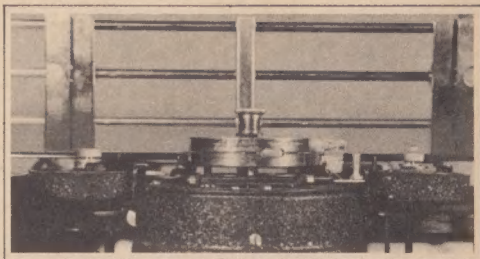
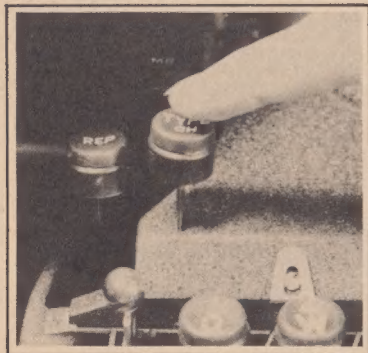
The VARI-TYPER COMPOSING MACHINE is electrically operated.

Do not attempt to use the machine until you have plugged in the electrical connection.

CAUTION: Test the connection by turning on the stencil light. If this lights, the machine will operate. (Be sure that the lamp is screwed into place.) SECOND TEST: The motor should "whir" after every 19 strokes.

2. Insert Type Font

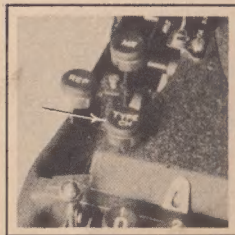
DEPRESS THE TYPE CHANGE KEY



THE ANVIL WILL RISE

Push the type change key down with a FORWARD THRUST. It is made to catch when all the way down. Paper rack indicator bar must be up when types are changed.

NOTE: The key will stay there keeping the anvil up.



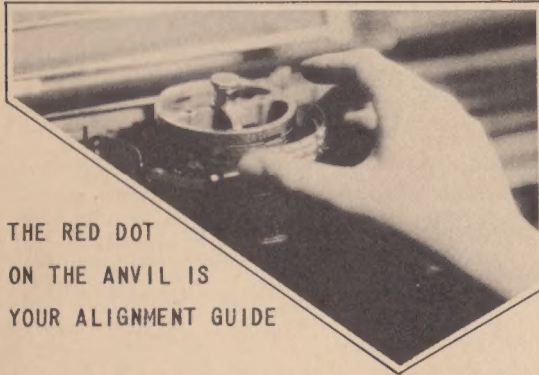
Hold the type between the thumb and forefinger with the "flange" out. The little knob in the "flange" should be down.

Examine the anvil and you will find in the type font slot, a little to the right of center front (under a red dot) a place where the little knob of the type font can be inserted.



HOLD THE TYPE FONT

INSERT THE TYPE FONT IN THE ANVIL

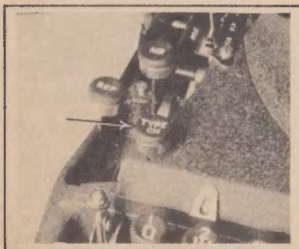


THE RED DOT
ON THE ANVIL IS
YOUR ALIGNMENT GUIDE

Slide the font to the left until the center is exactly in line with the center of the anvil.

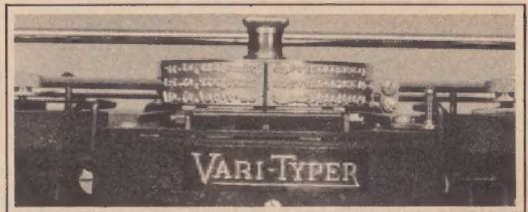
NOTE: The center of the anvil is marked by a small slot about three-eighths of an inch to the left of the red dot previously referred to.

Exert a little pressure on the type change key to release it. This is done by a combination downward and frontward motion.



RELEASE TYPE CHANGE KEY

SLIDE IT INTO POSITION



NOTE: If the anvil does not drop properly into position---the reason may be that the type font has shifted from center. Adjust the font so that it is in the center alignment and again drop the anvil.

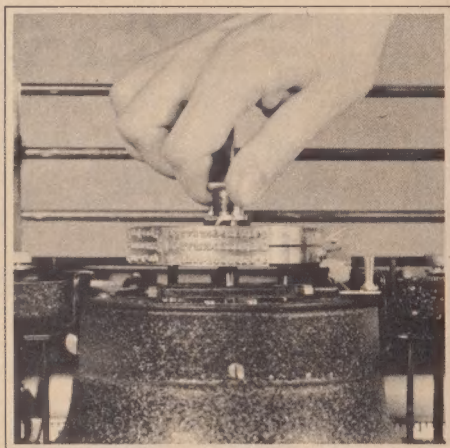
NEVER USE FORCE

SWING THE TYPE FONT INTO POSITION FOR TYPING

Raise the anvil by its knob, using the thumb and forefinger, and twist the anvil a half turn (either to the left or right--in which ever direction it will turn) until it will turn no further-----

LET GO.....

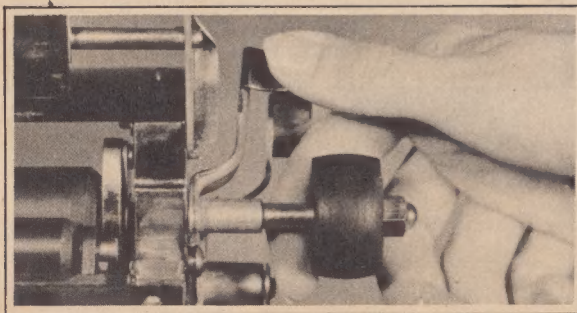
The anvil bearing the type font will drop into position --ready to be used. Two type fonts may be placed in the anvil at one time.



RAISE THE ANVIL BY THE KNOB
AND TWIST

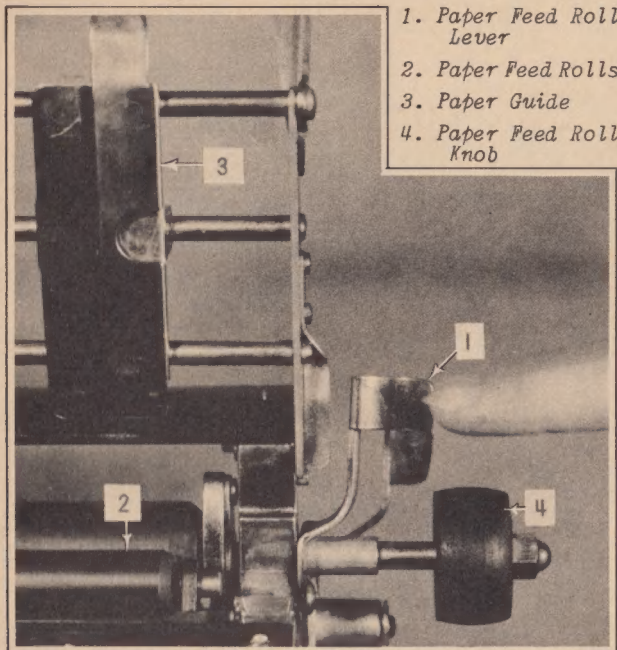
NOTE: Every font of type should be used according to the specifications given in the Type Chart shown on page twenty-three. The pressure exerted by the impression hammer should be modified for each size of type. The height of the letters in a given type font will control the horizontal and vertical spacing. USE THE CHART.

3. Insert Paper



At the right end of the carriage you will find a lever, which, when pressed back, allows a separation of the feed rolls. The feed rolls should always be left open when machine is not in use.

PRESS THAT LEVER BACK. *The two paper feed rolls will spread about a quarter of an inch.*



SET THE LEFT PAPER GUIDE

Insert the paper between the feed rolls (into the left paper guide) Drop the paper to the bottom of the carriage.

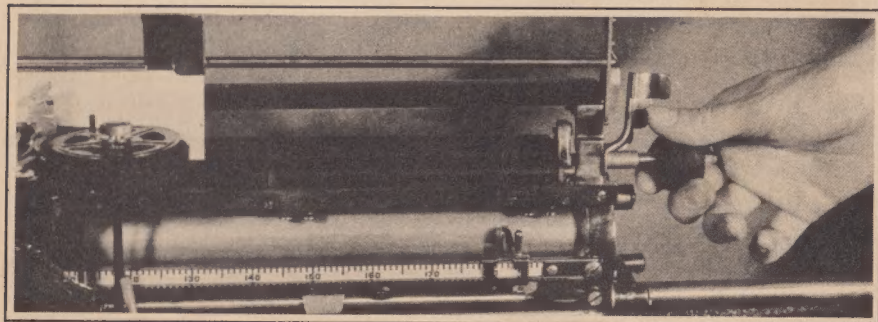
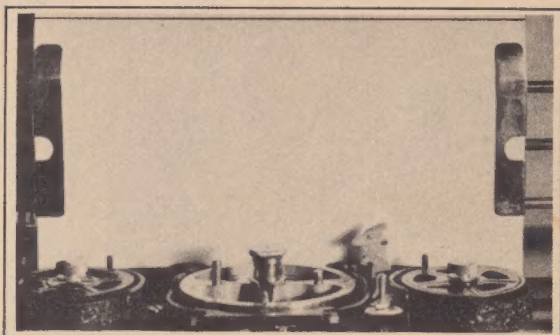
SET THE RIGHT PAPER GUIDE

RELEASE PAPER FEED ROLL LEVER

The rollers will close - holding firmly.

NOTE: The bottom of the paper is inserted between the feed rolls.

ROLL PAPER DOWN INTO CARRIAGE



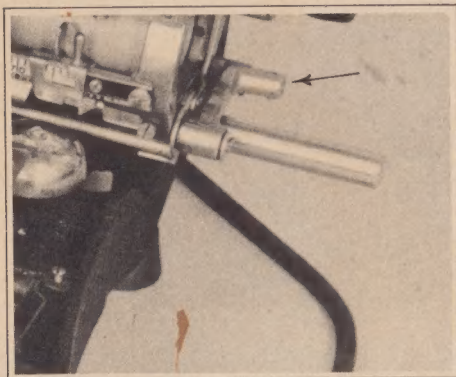
4. Horizontal Spacing

Vari-Typer models are either two, three or four space. To the right, about the middle of the machine, is a small lever indicating the spacings. It will be some combination of 10, 12, 14, 16 and 18. This shows the number of letters to the horizontal inch.

Typed with the lever set at:

10 -	1 2 3 4 5 6 7 8 9 0
12 -	1 2 3 4 5 6 7 8 9 0
14 -	1 2 3 4 5 6 7 8 9 0
16 -	1 2 3 4 5 6 7 8 9 0
18 -	1 2 3 4 5 6 7 8 9 0

THE ESCAPEMENT BAR LEVER



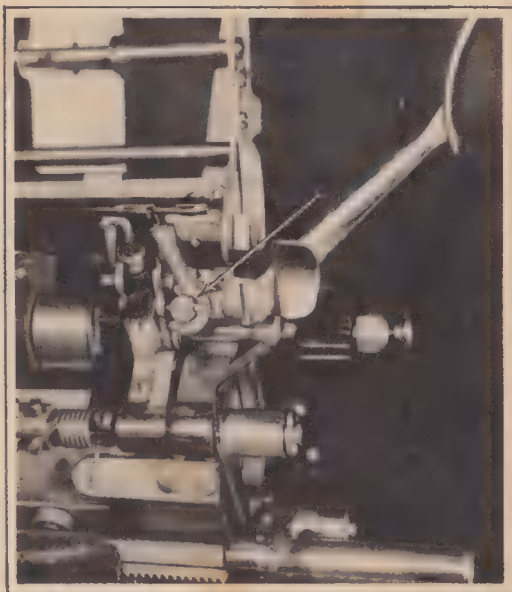
To shift from one horizontal spacing to another, simply move the horizontal spacing control lever to the right, and then slide it forward or backward to the desired spacing notch and release.

NOTE: In order to line up copy with previously Vari-Typed work, it may be necessary to use the escapement bar lever. To do this place the left hand at the left end of the carriage, with the feed roll knob in the palm of the hand. The third and fourth fingers will easily reach down to grasp the escapement bar. Raise the bar, free the carriage, lower the bar gently and the carriage will operate at the same spacing but at a different position.

Check the carriage for "banking" against the left margin stop. The carriage should have a slight amount of backward movement or "play." Should the carriage be "overbanked" (too tight against the left carriage stop) raise the escapement bar lever as described above and move the carriage a half inch or so to correct the condition. It may be necessary to do this several times to obtain the proper "play" in the carriage. It is not necessary to check this on the ten pitch.

5. Vertical Line Spacing

At the left of the carriage, in the back, there is a small chrome plated knob that can be raised about an eighth of an inch. Lift this and move it into the desired notch. The carriage return lever will automatically space the lines from nine to three per vertical inch depending upon the setting of this knob. Setting the vertical spacing knob in the first hole at the top will cause the paper to move one-ninth of an inch or nine lines per inch. Setting the knob



in the next notch will cause the paper to move three-eighths ($1/6$) of an inch, resulting in the line spacing of six per vertical inch. The next notch controls the line spacing at four and one half lines per vertical inch; the next at three and three-fifths lines per vertical inch; and the last notch (at the bottom) will space three lines per vertical inch.

Check the setting of the notch. Press the return lever gently so that the number of "clicks" can be counted.

LINE SPACING

Eighteen "clicks" equal one inch.

2 clicks give 9 lines to the inch

3 " " 6 " " " "

4 " " 4 1/2 " " " "

5 " " 3 3/5 lines to the inch

6 " " 3 lines to the inch



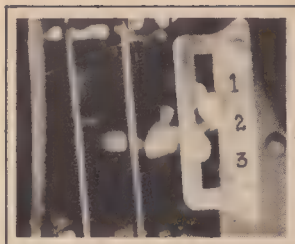
THE RATCHET RELEASE PIN

To move the paper vertically in the machine to any desired position, pull out the Ratchet Release Pin and turn the Paper Feed Roll Knob.

6. Impression Control

At the left of the anvil housing is a lever that can be set at one, two or three impression. The construction of the VARI-TYPER assures the maintenance of uniform pressure on the type plate, resulting in even ink deposit in any duplicating process. The amount of tension that should be given the impression hammer is dependent upon the size of type and the kind of paper or stencil used. The chart on page twenty-three is a guide to Impression Control.

NOTE: Keep the impression control lever at one when the machine is not in use.



7. Bold Face Repeat Key

Many fonts of type can be used for headings and subheadings in typographic layout. The Repeat Key mechanism permits the depositing of extra ink on a letter to give the bold-face effect. The key is located at the left side of the machine just beyond the Type Change Key (marked REP). To operate the Repeat Key, depress the letter to be printed and hold down while you strike the Repeat Key.



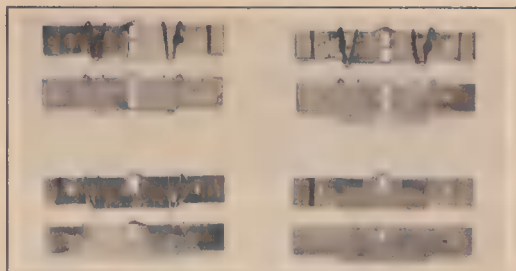
TYPING CHART CLIPS



When using special type fonts it is convenient to use typing charts that are guides to the location of characters and special designs. Clips to hold the charts in position in front of the keyboard are provided.

8. Ribbon Shields

CAUTION: *Never use the machine without a ribbon shield.*



VARI-TYPER RIBBON SHIELDS

TOP-LEFT: The standard two-window shield for two color cloth ribbons.

BOTTOM-LEFT: The standard single window shield for one color ribbons.

TOP-RIGHT: The special two-window shield for use with a two color "Ditto" ribbon.

BOTTOM-RIGHT: The new one-window quarter-inch carbon paper ribbon shield.

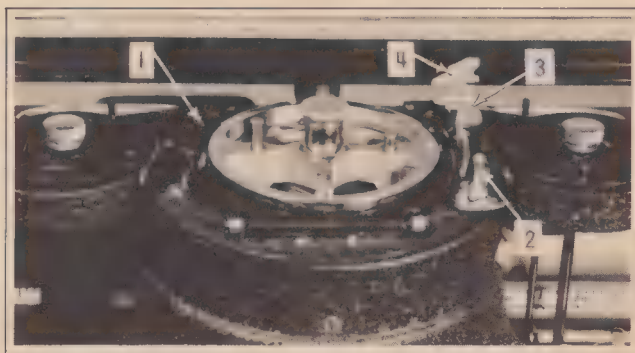
(Fronts and backs are shown)

Each kind of ribbon has a shield especially designed for its proper use. At the left are shown the "front" and "back" of four kinds of shields.

CAUTION:

After installing the ribbon shield it is well to check the hammer clearance. Drop the shield (without the ribbon in it) into position for typing and press any type key - look to see that the hammer clears the shield opening all around.

1. The Shield Frame
2. Frame Adjuster
3. Frame Adjuster Bracket
4. Adjuster Bracket Pawl



NOTE: *The metal plate mechanism is not equipped with a frame adjuster.*

THE CLOTH RIBBON SHIELD IN POSITION

NOTE: All shields must be pushed all the way down to the bottom of the shield frame.



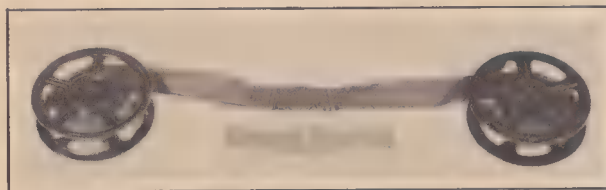
To insert the cloth ribbon shield, move the frame adjuster to the left position and turn the adjuster bracket pawl into a vertical position. The shield frame can then be raised.

Gently squeeze the prongs of the frame together and slip the ribbon shield over the ends of the frame. Be sure that the smooth side of the shield is toward the carriage and the wire ribbon guides toward the front of the machine and that the shield is down as far as it will go. Test the placement of the shield by depressing the space bar. The hammer should pass through the frame without danger of striking the metal.

Unscrew the ribbon reel knobs and install the two reels with the ribbon emerging toward the carriage.

Slip the ribbon down into the longer wire guides and then under the short retainer wires.

Lower the frame shield and ribbon into position for typing and smooth the ribbon into the guides.



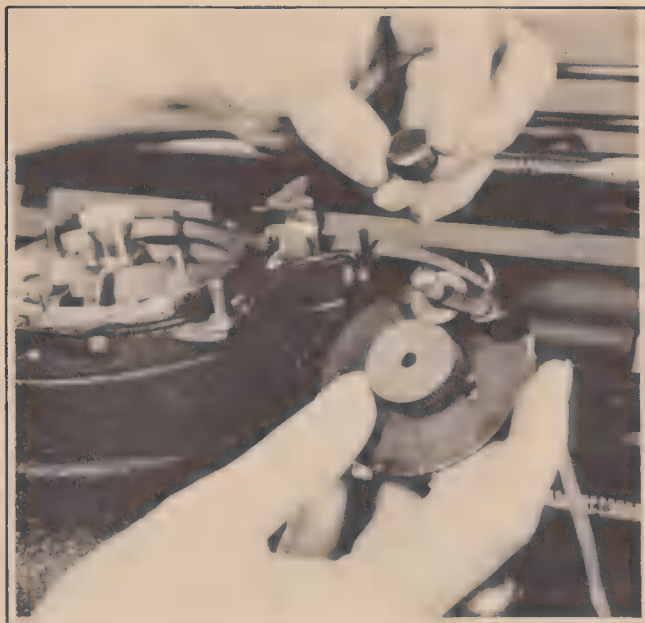
LEFT: The cloth ribbon inserted in its shield.

To install the carbon paper ribbon, follow the procedure given before--except that the ribbon is threaded through the flat tube of its shield before it is inserted on the frame.

CAUTION: Be sure the carbon side of the ribbon is toward the paper.

RIGHT: The carbon paper ribbon threaded through its shield.

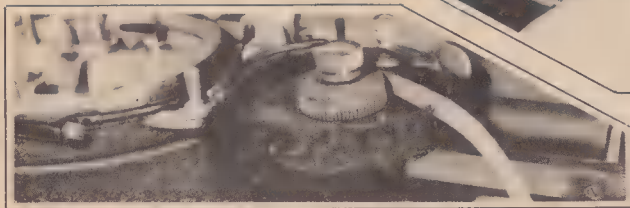
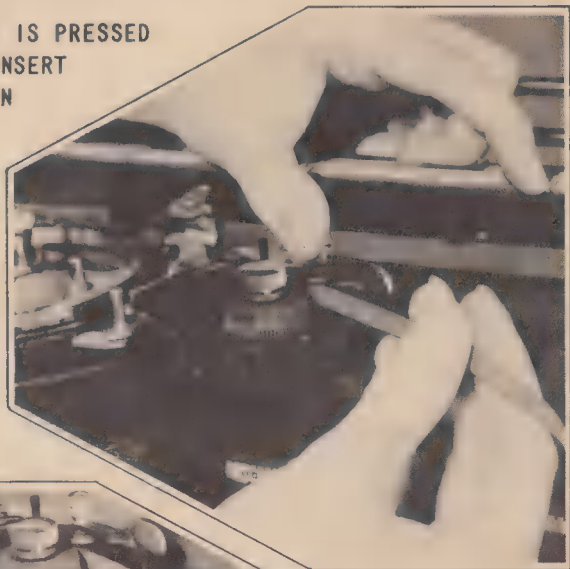




The carbon paper ribbon power mechanism replaces the right cloth ribbon spool. It fits snugly into the well. Strike the space bar until it drops into position. Screw the nut down to hold it securely.

THE IDLER IS PRESSED
BACK TO INSERT
THE RIBBON

After the carbon paper ribbon has been properly threaded through the shield and mechanism, test that the ribbon is feeding by typing several words.



THE CARBON PAPER
RIBBON IN PLACE.



On the left side of the machine, almost directly under the carriage, is a chromium plated pin that can be used to turn the ribbon reels manually. In using carbon paper ribbon, pull out this knob and turn it. The power mechanism will turn.



9. Typing

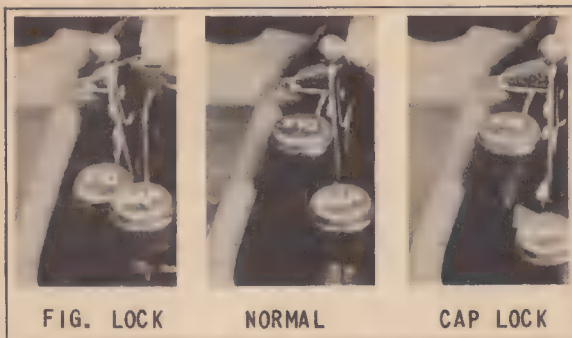
In giving the following typing instructions it is assumed that the prospective operator is familiar with the arrangement of the standard keyboard.



The keyboard is identical to the standard three bank arrangement commonly employed.

There is one essential difference in the touch of the Vari-Typer composing machine as compared with an ordinary typewriter. In depressing the key, there is a distinct double action before the impression has been registered. The first part of the down-stroke of the key swings the type font into position to print the letter depressed; the second part of the down stroke releases a trigger holding the impression hammer in tension. It is essential that in typing, the operator "bottoms" each key.

CAPITALS-FIGURES LOCK



CAPITALS AND FIGURES

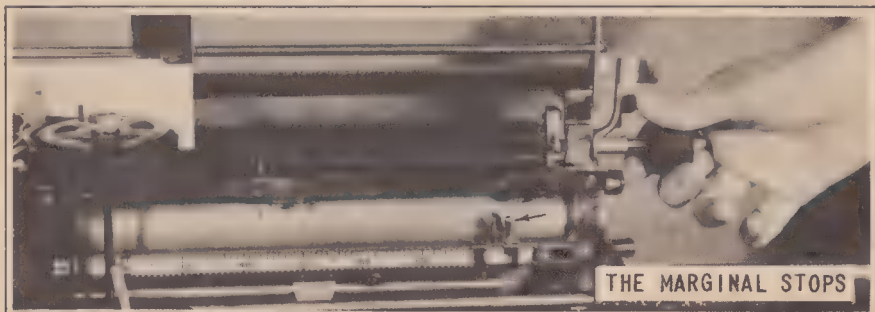
The capitals and figures shift keys are a part of the standard keyboard arrangement. They are located at the ends of the lower two rows, marked CAP and FIG. To lock either one, depress the key and shift the vertical lever between them to the left or right, to hold the desired key down.

TABULATION STOPS

(Top view of carriage)



The tabulation stops are located at the rear of the carriage on a scale that corresponds with the paper alignment and the marginal stops scales. The stops are moved by pulling them out and inserting them between the ridges that hold them.



The marginal stops are located to ride on a scale at the lower part of the carriage. This scale is coordinated with the paper alignment guide so that the marginal stops may be set by determining the desired locations on the paper guide.

NOTE: The Tabulation and Marginal Stops are accurate only at 10 spacing



MARGIN RELEASE

The marginal release key is located at the left of the carriage just in back of the repeat and type change keys.



TYPING ALIGNMENT BARS



At each side of the anvil in contact with the paper is a bar that shows the typing alignment. The letters rest upon the line

designated by the bars. The center of the letter to be printed is shown by the arrow point on the ribbon shield at the center of the type font when at rest.

To locate the position on the paper where the letter will fall when struck, gently depress the space bar (taking care not to "bottom" the bar which would cause the carriage to move); the arrow-like top of the ribbon shield will indicate the position the proposed letter will occupy.

WRITING LINE: *Standard machine have a writing line .9 of an inch less than the carriage length.*

10. Margin Justification

"Justification" is a term used to describe the action of making the right hand margin of body type a straight line --- similar to newspaper columns.

To justify the right hand margin it is necessary to type correctly the body copy desired to within a few letters short or over the right margin limit.

Assume a "galley" to be composed three inches wide at twelve letters per horizontal inch. Instead of using a scale or ruler, use the machine for measuring by typing at the head of the column 123456789 space 123456789 space until 36 letter-spaces at twelve letters per inch have been composed (See copy on next page)

Now type the body copy within the limits of the line of numbers. Each line can be "over" or "under" as many letters ~~as~~ allowed by this formula: count the number of words in the line, subtract one, divide by two. (Disregarding fractions, this gives the maximum letter-spaces a line may be "over" or "under".)

ROUGH COPY FOR GALLEY COMPOSITION

123456789 123456789 123456789 123456

The Vari-Typer Composing Machine is (as) easy to operate as (a) typewriter. A good typist can learn to operate the machine in a few hours. () Facility comparable with typewriter manipulation is acquired with practice.

After all, there (are) only (a) few important variations to be remembered in (the) operation (of) the (Vari-Typer) () The horizontal and vertical spacing are both different, () but once (the) relationship between typewriter spacing and

A line is drawn at the right margin limit to determine the number of letters "over" or "under." The line is then marked to either "expand" or "contract" the spaces between the words, to compensate for the number of letters "over" or "under."

The example given here should clarify the statement just made.

MARKING THE ROUGH COPY FOR JUSTIFICATION

To mark copy for justification, a check mark over the word is used to indicate that the spaces before and after the word are to be increased one half space. A word circled means to decrease the spaces before and after by one half a space.

The line at the right facilitates the determination of the number of letters over or under the margin limit. The circle before the word "Facility" in the fourth line means to space only once instead of twice after the period.

It is a matter of choice as to which words to "spread" or "pick-up." It is advisable to avoid "rivers" in a column.

Never "justify" the first or last word in a line. This would defeat the purpose of "justification" which is to make the first and last letters of each line fall directly below the first and last letters of the line above.

THE HALF-BACK SPACER

The half-back spacer moves the carriage a half space to the right when depressed. It does not lock the carriage in that position. To print a letter a half space nearer the left, the key must be *held down*, and while the key is down the letter is struck.

What really is done is to write the sentence like this: THE MENARE - then the word "MEN" is moved over a half space *one letter at a time* using the half-back spacer.

Depress the Half-Back Space Key, print character and hold the character key; release the Half-Back Space Key. This saves the extra operation of the space bar.

Now you have a half space before and after the word "MEN."



EXAMPLE

To expand or "spread" one space, simply leave a space and a half before and after the word "man."

THE MEN ARE
THE MAN IS

EXAMPLE

To condense or "pick up" a space simply leave a half space before and after the word "men."

THE MAN IS
THE MEN ARE

To justify a line you "pick up" or "spread" as many words as there are letters over or under the margin limit. It is evident that only alternate words and not the first or last words can be treated for justification.

The first copy on Page 17 was typed again after being marked for justification.

FINAL COPY

The Vari-Typer Composing Machine is as easy to operate as a typewriter. A good typist can learn to operate the machine in a few hours. Facility comparable with typewriter manipulation is acquired with practice.

After all, there are only a few important variations to be remembered in the operation of the Vari-Typer. The horizontal and vertical spacing are both different, but once the relationship between typewriter spacing and

ERASING PLATE

Just above the feed rolls is a black curved plate. Raise the copy, press the paper rack back and make erasures against it.

CARRIAGE RACK JUSTIFIER

The Carriage Rack Justifier is a device for half-back spacing entire words in one operation, instead of one character at a time. It is located on the left end of the carriage rack, and has notches which correspond to the horizontal spacings of the machine.

To pick up a space between words, proceed as follows: write a word normally, space, and then move the knob down to the correct notch (1st notch for 16, 2nd notch for 14, etc.) and write the word. Move the knob back to its original position, and type the next word. You will then have "picked up" a space between the words. *Caution: Keep knob in normal position for regular operation.*

MATHEMATICAL MACHINE

The mathematical Vari-Typer differs from the standard model in that it is constructed to operate using four-row type fonts, which contain 120 characters. The CAP and FIG shift on the left are to be used on the normal machine. The shift on the right, marked NUM and DEN are for using the extra row of characters. The DEN, or Denominator shift, will give the fourth row with the exception of the exponents or small figures. To get these, use the shift marked NUM or Numerator. All standard types may be used on the mathematical machine, but the four-row types cannot be used on the standard machine.



Selection of Type Faces

HEADINGS -- 434-14-10, 229 (10 spacing), 250-10-12, 271, 170, 265-8, 300, 300-12, 145, 96, 27 caps, 122A, 97 Bold, 25 are adaptable, etc.

SUB-HEADINGS -- 229 (12 spacing), 270-8-14, 250-8-12, 265-8, 68, 169, 27 (small caps), 300, 225-8-14 and 211 are adaptable, to stencil, metal plate and photo-offset work.

EMPHASIS -- 97 Bold, 169, 68, 211, 265, 434-14-10, 229, 270-8-14, 180L Bold.

BODY COPY -- 224, 250-8-12, 250-7-14, 232, 271, 300, 300-12, 301-7-16, 310, 224-7-16, 233-7-16, 225-8-14 and 158.

FORMS -- 434-14-10, 229, 270-8-14, 180L Bold, 97 Bold, 96, 226, 27 (both large and small caps), 180L, 180 and 211.

PHOTO OFFSET -- All types.

STENCILS -- All types give uniformly good results; particularly recommended are the sharp types which "cut" even, clear, stencils.

DITTO -- (headings only) 232, 233, 180L, 27, 226, 158, 24, 23, 229, 270-8-14.

DIRECT TO PLATE -- 434-14-10, 229, 270-8-14, 170, 271, 224, 250-10-12, 250-8-12, 250-7-14, 250-6-16, 300, 225-8-14, 232, 233-7-16, 233, 27, 180L, 97 Bold, 169, 68 and 211.

As a general rule, use the type faces which agree in style. Thus, it is possible to use, on one page 250-10-12 for a main heading, 250-8-12 for a sub-heading, 250-7-14 for body copy and 250-6-16 for footnotes. Another combination which suggests itself, is the use of 271 (all caps) for a main heading, 271 (Upper and lower) for sub-heading, 224 for body copy and 224-7-16 for footnotes. In any event, when typing to approximate a printed page, use print styles of type.

Leave but one space after a period, as this spacing is used by the printer. Again, to achieve a better result on justified copy, half back space a word followed by a period at the end of a line.

Use the fewest possible number of types on any one job, in order to get simple, neat copy.

On a complicated form, with many sizes and styles of type, select your smallest types first and work up to your main heading. The reason for this is that Vari-Typer Faces give a good selection of small types but they stop at 14 point. Anything larger can be set in paper letters.

For work on forms, the gothic family offers the best chance to use the graduated scale of type sizes for headings, with matching bold-faced types.

Care of the Vari-Typer

FEED ROLLS

Always leave the feed rolls open when the machine is not in use. Rubber platens develop flat spots if subjected to pressure on a small area.

Clean the feed rolls with alcohol at least once a day - oftener if used frequently or constantly for stencils.

Clean the ribbon wells with a cloth. Do not blow the accumulation into the machine.

Do not leave a stencil in the feed rolls any longer than necessary to complete typing on it.

CARRIAGE

Use the paper rack vertically and always type with the paper alignment bar up.

Run a cloth through the carriage at least once a day to dust and clean out erasure particles.

TYPE FONTS

Type fonts should be cleaned with alcohol every time before using. When cutting a stencil the smaller types should be cleaned at least every twenty lines.

If a type font "sticks" when the keys are depressed - try the font on the opposite side of the anvil. Clean the font with alcohol and the anvil slot with a piece of cardboard run back and forth. If it still sticks, communicate with the Service Department.

RIBBON SHIELDS

Be sure the ribbon shield is set properly in the ribbon shield bracket. A shield out of position may cause broken types and other damage.

Shields should be kept clean (wipe with clean cloth) - especially for stencil, ditto and photo-offset work.

OIL

Never oil the type fonts. The anvil and fonts are made of metals that are self-lubricating.

Use oil very sparingly on the following bearings and gears:

bearings at the ends of front and rear paper feed rolls; sides of the paper rack at the square-headed bolts; roller bearings of the carriage, riding on the steel way-rod; three escapement wheels and attachments at the rear of the machine; (underneath the machine) - horizontal and vertical ribbon shaft bearings; horizontal spacing lever bearings; driver-arm shaft.

COVER

Always keep the cover on the machine when not in use.

KEYS

Clean the rubber keys with alcohol so that the complete keyboard will always be visible.



SUGGESTIONS

To type to the bottom of a card or sheet or paper, clip it to a longer sheet that can be held firmly by the paper feed rolls.

If you are not getting complete characters, look to see if the hammer face is coming clearly through the hole in the ribbon shield. To test this, remove the ribbon, depress ■ key and while holding it down look at the ribbon shield. There should be clearance on all sides of the hammer face.

Use denatured alcohol for cleaning type plates and feed rolls.

Do not jam a type font down into place. Try it again, after making sure that it is aligned.

An easy way to thread carbon paper ribbon through the shield is to cut it with a pair of scissors on a diagonal line.

When machine is not in use, leave feed rolls open.

Never leave the type change key or the CAP or FIG keys locked down when not being actually used.

Do not leave a stencil or a metal plate in the machine overnight or longer.

Keep anvil slot absolutely clean; also the backs of type plates.

Make sure that the Ribbon Knob on the left side frame of the machine is pulled out so the Carbon Ribbon will feed properly. If this knob is pushed in, the ribbon will not feed.

In making carbon copies always use one extra tissue sheet as a backing. This backing sheet can be used over and over again. Its use eliminates hammer marks on your carbon.

If the paper slips in the feed rolls, clean them with alcohol.

For accurate line spacing on the D-9, open end carriage, use the feed roll knob for vertical spacing.

If the carbon paper ribbon breaks often, loosen the knob on top of the carbon paper ribbon spool. If this trouble continues, place a circular piece of paper beneath the roll of carbon paper ribbon.

Clean the basket (the place into which the paper disappears) by using the wooden roller with a piece of cloth fastened to the end. Slide the roller through ■ few times and it will remove dust and particles of carbon.

NOTE: Some of the above suggestions appear elsewhere in this manual; however, they cannot be stressed too much.

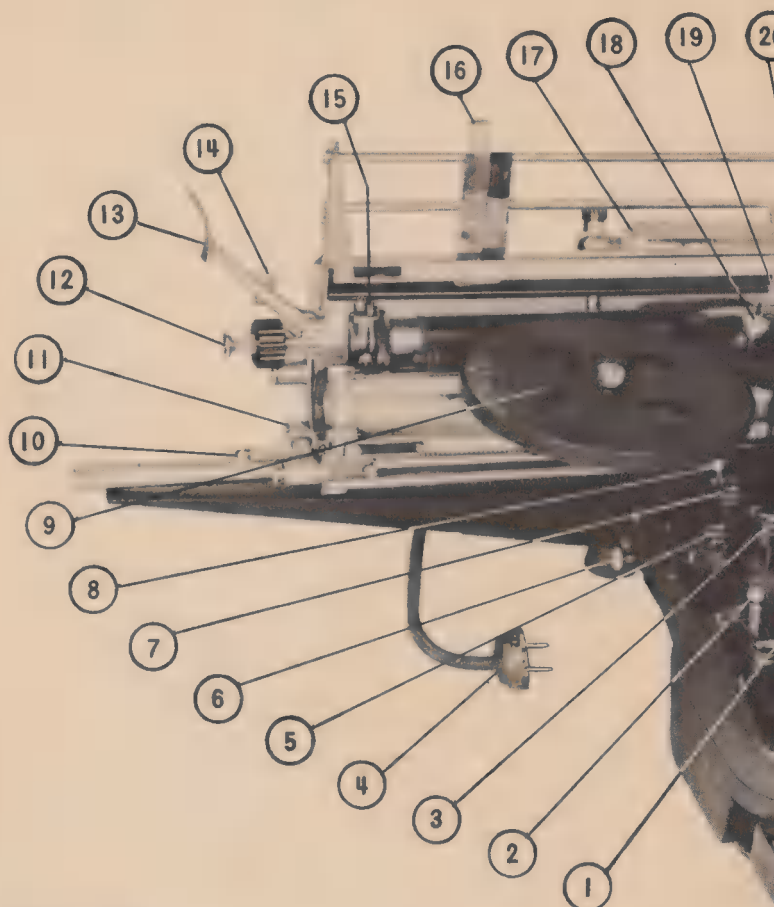
TYPE CHART

Type No.	Pt. Size	Type Description	SPACING		Impression	PAPER No. of Repeats	Impression	STENCIL No. of Repeats	Impression	DUPLEX PLATE No. of Repeats	Match. Italic
			Hor.	Ver.							
170	12	Clarendon	10	4½	3	1 on caps only	3	2 on caps 1 on lower case	3	1 on caps only	97 Bold
271	12	Manhattan N.S.	12	6	3	2 on caps only	3	2 on caps 1 on lower case	3	1 on caps only	169
224	12	Manhattan O.S.	12	6	2		3		3		68
250	10	President	12	6	3	2 on caps only	3	3 on caps 1 on lower caps	3	2 on caps 1 on lower case	169
250	8	President	12	6	3	1 on caps only	3	2 on caps 1 on lower case	3	2 on caps only	68
250	7	President	14	6	3	1 = caps only	3	2 on caps 1 on lower case	3	1 on caps only	211
250	6	President	16 & 18	9 & 12	2		2		3		211
300	10	Caslon	12 & 16	6	2	1 on caps only	3	2 on caps only	3	1 on caps only	211
225	8	Gotham O.S.	14	6	3	1 on caps only	3	2 on caps only	3	1 on caps only	211
301	6	Century	14 & 16	9	2	1 on caps only	3	2 on caps only	3	1 on caps only	211
224	7	Manhattan	16 & 18	9	2		3		3		211
434-14-10	14	Heavy Gothic	10	4½	3	2 on caps 1 on lower case	3	4 times on caps 6 times on N,M,W 2 on lower case	3	3 on caps 1 on lower case	97 Bold
229	12	Express Gothic	10 & 12	6	3	2 on caps 1 on lower case	3	3 on caps 4 on N,M,W 2 on lower case	3	2 on caps 1 on lower case	169
270	8	Express Gothic Small	14 & 16	6 & 9	3	1 on caps	3	1 on caps	3	1 on caps	211
180B	8	Park Bold	16	9	3	2 on caps	3	2 on caps	3	2 on caps	211
434	14	Medium Gothic	10	4½	3	1 on caps	3	2 on caps 1 on lower case	3	1 on caps	97B
96	12	Vari-Typer Gothic	10 & 12	6	2		3		3		169
27P 8&10		Light Gothic	10 & 12	6 or 9	2		2		2		68
226	10	Light line Gothic	12	6	2		2		2		68
180L	8	Park Medium	14 & 16	6 or 9	2		2		2		211
180	6	Park Medium	16 & 18	9	2		2		2		211
97 Bold	14	Gothic B. Oblique	10	4½	3	2 on caps 1 = lower case	3	2 = caps 1 = lower case	3	2 = caps 1 = lower case	-
169	12	Pica Italic	12	6	3		3		3		-
68	10	Elite Italic	12	6	2		3		3		-
211	8	Miniature Italic	16	6 & 9	2		3		2		-
233	7	Tariff Roman	16	6 & 9	3		3		3		211
232	8	Viennese Elite	12	6	2		2		2		68
260	9	Standard Elite	12	6	3		3		2		68
145	12	Standard Pica	10	6	3		3		3		169
122A	14	Discritical	10	4½	3		3		3		-

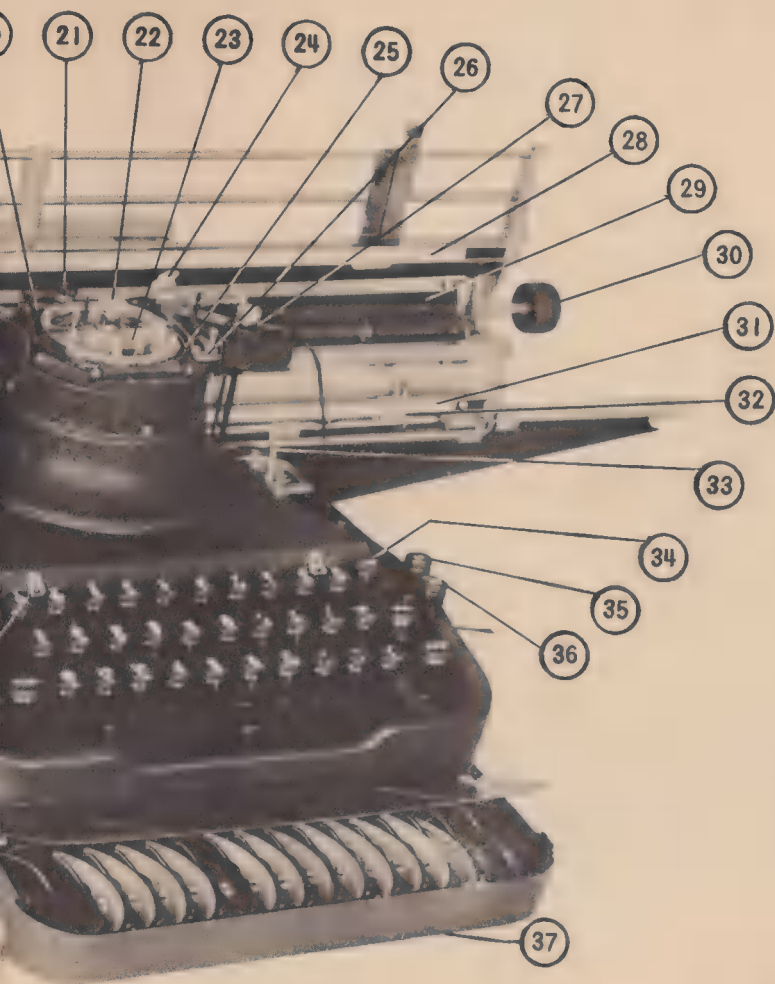
As your machine may vary slightly due to age, usage, or tension given it at our factory, the above instructions may advisedly be changed to obtain better typography. Be guided by your judgment as well as this sheet.



The Electric C



- | | |
|-------------------------------------|---|
| 1. TYPING CHART HOLDER | 13. CARRIAGE RETURN LEVER |
| 2. CAPITALS & FIGURES LOCK | 14. CARRIAGE RELEASE LEVER |
| 3. TYPE CHANGE KEY | 15. REAR VERTICAL SPACING
CONTROL KNOB |
| 4. ELECTRIC CORD | 16. LATERAL PAPER GUIDE |
| 5. BOLD FACE REPEAT KEY | 17. SHADOW LIGHT |
| 6. RIBBON FEED CONTROL | 18. STANDARD RIBBON REEL WELL |
| 7. RIGHT MARGIN RELEASE KEY | 19. TYPING ALIGNMENT BAR |
| 8. IMPRESSION CONTROL LEVER | 20. IMPRESSION HAMMER |
| 9. CARBON PAPER RIBBON HOLDER | |
| 10. CARRIAGE RACK
JUSTIFIER | |
| 11. ESCAPEMENT BAR LEVER | |
| 12. FEED ROLL RATCHET RELEASE LEVER | |



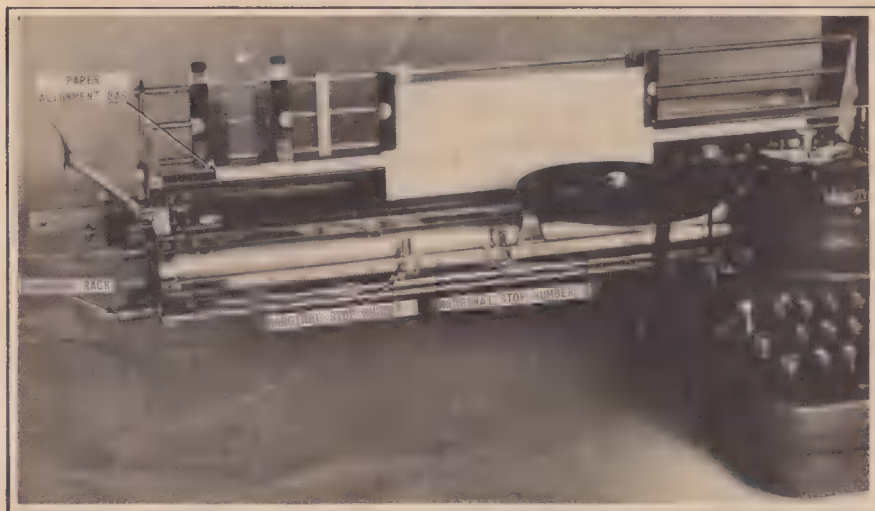
- 21. RIBBON SHIELD
- 22. ANVIL KNOB
- 23. ANVIL
- 24. SHIELD FRAME ADJUSTER PAWL
- 25. RIBBON SHIELD FRAME
- 26. SHIELD FRAME ADJUSTER
- 27. CARBON PAPER RIBBON MECHANISM
- 28. PAPER ALIGNMENT BAR
- 29. PAPER FEED ROLLS

- 30. PAPER FEED ROLL KNOB
- 31. MARGIN STOP SCALE
- 32. RIGHT MARGIN STOP
- 33. HORIZONTAL SPACING CONTROL LEVER
- 34. TABULAR KEY
- 35. BACK SPACER
- 36. HALF-BACK SPACER
- 37. TYPE DRAWER

INSTRUCTIONS FOR OPERATING
THE
AUTOMATIC JUSTIFICATION
VARI-TYPER

There are four controls on the automatic justification mechanism, three of which must be set for each column width. The fourth control is a "tab" stop

that has been permanently "fixed" at the center of the carriage. This "tab" stop does not have to be changed for most column widths except for special work.



This picture shows a twenty inch machine set for a three inch galley width. Note control number two at 80 and control number one at 50.

1. SET MARGINAL STOPS

Stop number two is kept near the center of the carriage, usually at 80*. Stop number one is changed for each galley width. Subtract the galley width (in tenths of inches) from 80 and set stop number one

at that number. **EXAMPLE:** A three inch galley (30 tenths) causes stop number one to be set at 50 ($80-30=50$); a four inch galley sets stop number one at 40 ($80-40=40$).

* Note: This stop is set at 40 on a nine inch carriage machine.

These scale readings have definite significance: marginal stop number **one** (control number one) designates the left margin of the rough copy while marginal stop number two (control number two) marks the right margin of

the rough copy. These scale readings correspond to those on the paper alignment bar.

NOTE: Columns from 1.9 to 3.6 inches can be composed on a nine inch carriage machine. On the twenty inch model the range is from 1.9 to 7.4 inches.

2. SET TABULAR STOP

At the rear of the carriage is a scale, equipped with tabular stops, corresponding to the

paper alignment bar and marginal stops scales.



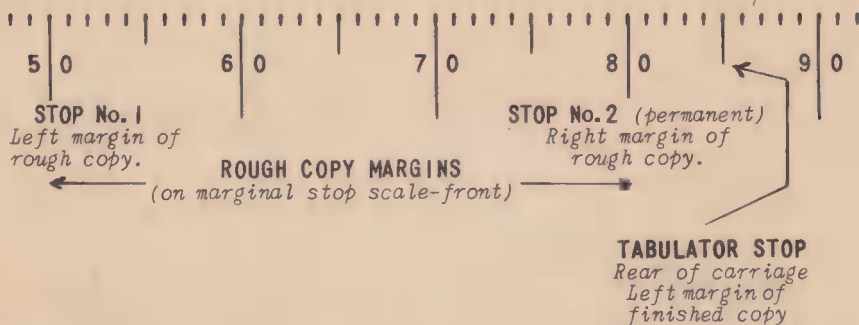
Picture Showing Tabulator Stops

One of these tabular stops should be set to mark the left margin of the finished column. Since it has been suggested to leave the stop designating the right margin of the rough copy

at 80, it follows that the left margin of the final copy should be left at 85. (This leaves a half inch between the first and finished draft of columns composed.)



SETTINGS FOR A 3" COLUMN ON A 20" MACHINE



When galley widths greater than 3.3 inches are to be composed on a nine inch machine this tabular stop must be set closer to 40 (42 for a 3.6 inch column).

This would leave only .2 of an inch between the rough and final copy.

So far three controls have been set, one of them permanently.

3. SET HORIZONTAL SPACING CONTROL LEVER

The horizontal spacing control lever should be moved only after the carriage is pushed to the extreme right. When the car-

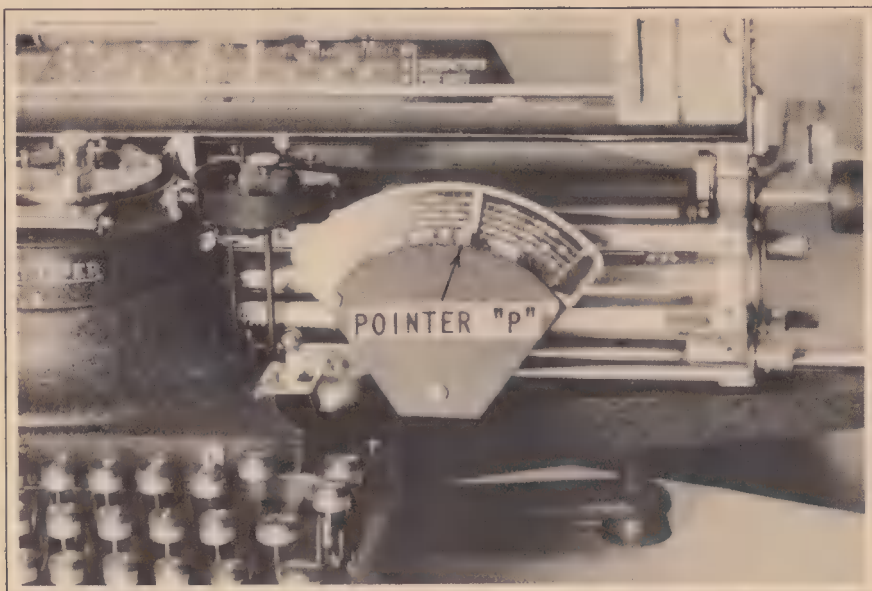
riage is in this position, the pointer "P" on the dial will stand at "N".

4. CHECK POINTER AND DIAL READING

Fastened to the rear of the carriage is a bar the same length as the carriage, three quarters of an inch deep and nearly $\frac{1}{2}$ inch thick. It is hinged at both ends to extensions $3\frac{1}{4}$ " long. On this bar is mounted a movable roller that can be fixed at any point by a set screw at the top. The wheel of this roller rides on a track.

Move this roller to a point op-

posite the right end of the black scale on rear of the machine. The track on which the above mentioned roller rides is split. The right portion of this track remains at all times in a horizontal position, the left section is inclined automatically at an angle to compensate partial escapements. At the junction of these sections is a bracket pointing to a scale. Set this bracket to extreme left.



Picture Showing Pointer "P"

With the carriage set against the left margin stop of the rough copy and the horizontal spacing control lever in the desired notch, strike the space bar repeatedly until a bell rings. Watch the dial after a stroke or two more. The pointer will move across the dial indicating the number of letters and spaces that can still be typed within the designated galley width at the spacing employed. The dial is calibrated in four scales marked at the right end by the numbers 10, 12, 14, and 16. These scales refer to the setting of the horizontal spacing control.

In order that the left and right margins are justified accurately it is necessary that the left edge of the pointer is over the center of a number on a scale corresponding to the setting of the horizontal spacing control lever. For example: suppose that typing is being done at 14 letters per horizontal inch: as the pointer moves across the dial after the warning bell has been sounded, it should cover successively the numbers on the third scale from the top (marked 14) with each movement. If the pointer is not "splitting" the numbers, lift the carriage rack, move the carriage, (free



of the mechanism) about a half inch to the right and again engage the gears. This carriage rack is easily lifted by holding the left end of the carriage in the palm of the left hand and reaching down to a bar that just meets the finger tips about four inches down and slightly back from the center of the carriage.

Move the pointer back to ■ and again strike the space bar. Check the relation of the pointer with the numbers on the proper scale of the dial. Repeat this oper-

ation until the pointer is over the numbers as stated above.

On some models, this adjustment may be slightly different. At the left end of the carriage on a line with the marginal stops scale is a thumb screw. Type until the pointer on the dial is nearly over one of the numbers under discussion. Turn the thumb screw until the pointer is in the desired position.

NOTE: "Copy" written at ten letters per horizontal inch need not be checked as to pointer-dial scale relation.

5. SET SPLIT TRACK BRACKET

Move the carriage to the extreme right until it is stopped by the left rough copy margin control. Type numbers 123456789 and then strike a space; repeat this until the pointer on the

dial stops at 0. Using the settings as suggested earlier in this manual, (80 and 50) with the horizontal spacing control at 14 the line will look like this:

123456789 123456789 123456789 123456789 123

Theoretically, when the margin stops are set for a three inch column written at fourteen letters per horizontal inch, the number of letters in a normal line would be 42. ($3 \times 14 = 42$) However, due to the requirements of flexibility, the number of letters may be one over.

Set the split-track-bracket indicator on the number of letters just determined, in the line marked to conform with the hori-

zontal spacing control. For EXAMPLE: assuming the settings discussed previously, (three inch column at 14 letters per inch) the number of letters typed proved to be 43. The hair-line on the split-track-bracket would be set on 43 in the third row from the top (marked 14). It will be easier to "set" this control by pushing or pulling the track instead of the bracket.

6. SET MOVABLE ROLLER

Move the carriage to the extreme right until it stops against the left rough copy margin control. Strike the space bar repeatedly until the warning bell rings. Strike once or twice more until the pointer has started to move across the face of the dial. Press the tabulator key. WARNING: it is best to check the bump of the carriage by retarding the motion with the left hand. Strike the space bar once.

The carriage is now in position to compose the left margin of the finished column.

Set the movable roller so that the center mark is in line with the center line of the split-track-bracket.

To be sure that none of the adjustments was moved, check the settings:

1. Rough copy margin stops at 50 and 80. (three inch column)
2. Split-track-bracket hairline on the number as determined by typing 1 to 9 repeatedly.
3. Movable roller set opposite the split-track-bracket mark. This must be checked accurately by repeating the manipulations of setting the roller. (Strike the space bar until the bell rings---strike a few more until the pointer starts moving across the dial---in correct relation to the numbers---press the tabulator key- (easing the bump of the carriage)---space once and then check the roller position with relation to the split-track-bracket.

YOU ARE NOW READY TO COMPOSE COLUMNS AUTOMATICALLY JUSTIFIED

7. INSERT PAPER

Set the left edge paper guide approximately a half inch to the left of the left rough margin stop. In the example of these instructions the guide would be set at 45. This is to insure a margin at the left and the right

adequate to handle the final copy. The paper should be slightly wider than twice the column width to be composed. For the example we have been using during this discussion an eight inch paper width will be ample.



8. COMPOSE JUSTIFIED COLUMNS

NOTE: The machine, having been set for a certain column width, will automatically stretch a line, typed within the present marginal limits. This means that the line to be composed cannot be longer than the number of letters calculated in operation 5. The operator types each line just short of the maximum, attempting always to reach the line length limit. Whatever the operator types in the first draft (column on the left) must be repeated in the second column if the right and left margins are to be straight lines.

Move the carriage to the starting position, against the left margin stop of the rough copy. Type the line until the warning bell rings. Look at the pointer position on the dial. It will indicate the number of letter-spaces that can still be typed. Either finish the word, hyphenate or write ■ short word to finish the line. Always try to compose the line with as many letters as can possibly be written on that line.

When the line has been completed, press the tabulator key, checking the bump of the carriage with the left hand. Strike the space bar once. Type the line exactly as it was typed at the left rough copy column. The machine will automatically stretch the line composed at the left to the desired column width which was pre-set.

NOTE: Given rough copy which is typed short of a determined width, justify it as follows: Set marginal stops to extreme right. Select same hor-

izontal spacing as used; set pointer in agreement with it. Move split-track-bracket to width of line desired. Also set movable trolley, so that after tabulating, and spacing once, it is opposite the split-track-bracket. Insert paper, tabulate, space and set dial to number corresponding to the number of characters short of determined width (count number of clicks aloud - from highest number down to the one desired). Type line; the machine will justify it.

If rough copy is Vari-Typed, type at end of each line the dial reading. This number can be used later on the final copy.

If an error has been made in the rough copy, type over the line and tabulate when the number of letter-spaces in the line meets with the approval of the operator.

If an error is made in the final copy, corrections can be made in one of three ways. First, the error can be erased and the correction typed in. This is not recommended for photo-offset preparation. The erasures usually leave a "ghost." Secondly, the line can be written immediately below the line containing the error. When the column is completed, the paper is cut just below the line in error and the corrected line is pasted over the one that is wrong. The third and recommended procedure is to note at the end of the line that it contains an error. When the entire column has been completed, the lines containing the errors can be composed and then "stripped in" over the errors.

RULE OF THUMB METHOD

FOR OPERATING THE AUTOMATIC JUSTIFIER

NOTE: For the purpose of this instruction assume a 3½" column to be composed.

1. Multiply the number of inches wide the column is to be, by ten, and subtract from 80. ($3\frac{1}{2} \times 10 = 35$ subtract from $80 = 45$).
2. Set the left margin stop at that number (45); the right at 80.
3. Set horizontal spacing control lever. (Be sure to have the carriage at extreme right.) Assume 12 spacing to be used.
4. Set movable roller (at rear of carriage) to a point opposite the right end of the black scale on rear of the machine.
5. Set split-track-bracket to extreme left.

6. Check pointer position with relation to 12 scale on dial at right.
7. Type numbers from 1 to 9 until pointer is at "0."
8. Set split-track-bracket indicator on number determined (in 7 above) on scale marked "12."
9. Set movable roller as per instructions given.
10. Check all of the settings given above.
11. Insert paper of proper width.
12. Type rough and final copy as per instructions.
13. Touch up corrections for final galley proof.

EXAMPLE - FOLLOWING ABOVE INSTRUCTIONS

The Vari-Typer Electric Composing Type-writer is easy to operate. By following a few simple rules, an operator will shortly master the machine, and from then on the work will be a pleasure. Composing a column or "galley" and pasting up the final

HINTS ON COMPOSITION BY ABOVE METHOD

It is always the rule of printers to set type as closely as possible. To achieve this, it is sometimes advisable to use a horizontal spacing closer than usually recommended for ordinary composition. Take type number 224 for instance. It is designed to be used at 12 letters per horizontal inch. Using

the automatic justifier with the horizontal spacing lever set at 12 causes the final galley to be composed at something less than 12 letters per horizontal inch, due to the fact that each line is stretched a few letters more or less.



To overcome this, it is well to shift the lever into 14 pitch and then stretch the line two characters per inch. For example: to compose a three inch column with number 224 type, make all adjustments as described in the preceding pages. Instead of setting the horizontal spacing control lever at 12, set it at 14. Type the numbers 1 to 9 and space as before. Set the split-track-bracket indicator at the number indicated by typing. Set the movable roller as per instructions. Now the difference comes in: type the line short six letters every time if at all possible. That is, make the machine "stretch" the line six letters every time. The resulting typography will be at 12 letters per inch instead of less than that number.

This alteration of standard procedure can be best explained by arithmetical treatment.

By typing out numbers from 1 to 9 to determine the galley width in letters, three inches will give approximately 43 letters. If now the rough copy is written so that the line is five or six letters short each time, there will be just 35 or 36 letters in the rough copy line. That means that in the final copy line there will be only 35 or 36 letters stretched out to fill a column three inches wide, or 12 letters per horizontal inch. The only danger lies in the operator forgetting to "stretch" each line five or six letters and thereby "jamming" the characters. This is a common fault of beginners.

COMPOSING HEADINGS

It is sometimes desirable to compose a subheading or a heading without the necessity for resetting the machine. For beginners it is best to wait until the galley composition is finished, set the machine for "no-justification" as will be explained later, and then "strip in" the headings and subheadings.

However, for those who can follow instructions the process is quite simple. Change types to the one wanted for the heading. Type the heading to be composed start-

ing flush left in the rough copy column. Then type numbers from one on up until the warning bell rings. End the typing of numbers with an even number with as big a "stretch" as is possible at the spacing being used. Now tabulate to the left margin of the final copy as always. DIVIDE the numbers after the heading by two. Strike the space bar that number of times. Type the heading or subheading. It will be found to be in the center of the column.

A little variation of this procedure is to compose the heading by typing "letter-space." That is type a letter of the heading then a space then the next letter and another space then the next letter and another space.

Then follow with the typing of the even number of numbers: divide by two, space that number with the space bar and then "letter-space" the heading into place. A little practice will clarify this procedure.

HOW TO JUSTIFY LESS THAN 1.9" COLUMNS

NOTE: This method is only a makeshift but will give fairly satisfactory results. The narrowest width that can be composed by this method is approximately one inch.

1. Follow all the instructions for setting up galley copy except that all settings must be double the width desired. In other words, to compose a column 1.5" wide set all controls as for a 3" column. Test the settings by typing a few lines rough and final as though for the actual setting, instead of for half the width, to prove that all settings were correctly made.

2. Use the space bar for EXACTLY half of the number of letters that can be normally typed for the setting as made. Then type the copy desired in the second half of the rough copy. Note the position of the pointer when the tabular key is depressed. After tabulating and getting the carriage in position for the normal left margin of the final copy, move the pointer to "N"

and then to the number DOUBLE the number noted when the tabulator key was depressed. Type the line (really the half-line just composed in the rough) and repeat for the next line, remembering always that the pointer position must be noted after "blanking" the first half of the line: tabulating and then doubling the position of the pointer: then typing.

NOTE: The right and left margins of the final copy will not be perfectly accurate but will be fairly satisfactory.

CAUTION: Use even numbers in the galley width to get best results. In order to be able to "double" the pointer location it is necessary to continue typing until the pointer is below half the number at the end of each scale. (6 when typing at 10 or 12; 8 at 14 and 16.) In other words when typing at 10 or 12 letters per horizontal inch the pointer must be at 3, 2, 1 or 0. When



typing at 14 or 16 letters per horizontal inch the pointer must not stop until it reaches 4, 3, 2, 1 or 0.

TO COMPOSE GALLEYS WIDER THAN 3.6" ON THE 9" MACHINE
 Make all settings on the machine as per instructions given here for the sole purpose of determining the column width to be composed in number of letterspaces.
 Compose the rough column in its entirety being careful not to exceed the limit set by the width of the column to be composed in letters. From this rough column the number of letters each line is short can be determined at a glance.

Vari-Typer type faces should be selected to serve some purpose. Bold faces are needed for headings. Captions in most office forms are

For each line set the pointer at the number on the dial in the scale (corresponding to the horizontal spacing being employed) equal to the number of letters short the line is from normal or full. The machine will then "stretch" each line to its pre-set width. Always set the pointer after first moving it to the "N" position. (The pointer can be set from ■ greater to ■ smaller number but not from a smaller to a larger.)

TO COMPOSE STENCILS, METAL PLATES, DUPLIMATS, ETC.

Follow the procedure as outlined above for composing copy wider than 3.6" on the nine inch machine. Use the same method on both the nine inch and the twenty inch carriage machine. The only difference is that the final copy will be typed on stencils, metal plates or duplimats instead of paper. When more than one column is to be justified, the stencil or paper or metal plate will have to be moved so the column to be justified is in the right position. REMEMBER THAT: every stroke of the keys is registered by the machine when the rough copy is composed. Therefore, if ■ double space is used in the rough copy after a period and only a single space is used in the finished column, the line will be out of alignment. Never use force to make any setting. If the instructions are carefully followed all settings will be made with precision.

NON-JUSTIFYING SETTINGS

To use machine as a normal Vari-Typer move all controls to the extreme left. That means the two margin stops in front and the movable roller (lift bar and slide to left) and split-track-bracket.

SPIRIT DUPLICATORS: Use a good grade of master paper, backed with special hard carbon paper typed with the carbonized side against the back of the master. Use a thin backing sheet. For best results, use a light im-

pression.

GELATIN DUPLICATORS: Use a good grade of master paper and a good grade hectograph cloth ribbon. Regulate impression according to the moisture of the ribbon.

Instructions for Writing Stencils

The proper use of the Mimeograph is absolutely necessary in order to produce work which will be satisfactory. General instructions regarding stencil writing and the use of the Mimeograph will be provided by any A.B.Dick office or dealer. *Instructions in this outline are confined to*

the correct use of the Vari-Typer Composing Machine in stencil writing.

Throughout these instructions you are advised to use the *Vari-Typer stencil backing sheet*. Between the stencil and the backing sheet, use the cushion sheet supplied with the stencil.

PREPARATION OF COPY

It is recommended that a dummy copy be set up before the actual stencil is written. This is particularly important if the format is to be 2 or 3 columns. This dummy can be pasted up and followed carefully. If the copy to be composed on the stencil is a simple layout such as ■ ■ letter, bulle-

tin or notice it is not necessary usually to set up a rough copy unless the finished copy is to be "justified." In the preparation of a form there are two alternatives. The form may either be ruled first on the stencil or ruled with a heavy black pencil on the backing sheet.

PREPARATION OF VARI-TYPER

1. Remove the ribbon. (*Not the shield.*)
2. Clean feed rolls with alcohol.
3. Clean types thoroughly with alcohol.

PREPARATION OF STENCIL

1. Tear off stencil backing sheet along perforated line and clip the stencil to Vari-Typer backing sheet at the top using two paper clips.
2. Be sure stencil and backing sheet are in perfect alignment before inserting in the machine.
3. Keep clips on stencil until stencil is removed from Vari-Typer.



INSERTING THE STENCIL

1. Raise Line Scale and push paper rack back to horizontal position.
2. Open feed rolls and slide stencil, tissue and backing sheet between feed rolls from right side.
3. Bottom of stencil should rest lightly on level floor of the paper basket. Close the feed rolls.
4. Lay stencil back against horizontal paper rack with palm of left hand. Now with the left hand resting lightly on stencil, turn right-hand

feed roll (pull out the Ratchet Release Pin).

5. Release feed rolls 4 or 5 times during the process of rolling the stencil down into the basket of the Vari-Typer. This prevents the stencil from buckling or wrinkling between the feed rolls.

NOTE: Some operators prefer to roll the stencil into the form of a tube and insert the roll into the carriage. Others prefer to use the "split roller" that is recommended for metal plate work.

STRAIGHTENING STENCIL

Line up the stencil with the paper alignment bar on either of the horizontal lines at the top of the stencil.

NOTE: 1. Clean type plates frequently while cutting stencil.

2. Check alignment of stencil four or five times in typing down the page. This can be done by bringing the paper alignment bar down over the face of the stencil

and aligning it with the numbers marked on each side of the stencil. If the alignment is not absolutely accurate the feed rolls may be released and the stencil straightened in the basket. However, it is advisable that straightening be done only between paragraphs and not between lines.

CORRECTIONS

1. Roll stencil up several lines.
2. Press back paper rack.
3. It is recommended that you use A.B. Dick correction fluid. Follow instructions given on the bottle

carefully.

4. Return stencil to correct line by use of the line guides, and type over the word or letter corrected.

IMPORTANT

1. After the stencil is removed from the Vari-Typer, clean the feed rolls with alcohol.
2. Never leave stencil in the Vari-Typer for a longer period than is necessary to complete the page.

WRITING STENCILS

Use of Backing Sheet

The mimeograph stencil manufacturers designed their product to be used in the standard typewriters. Let us consider the conditions under which these stencils must be used, and then compare the conditions under which these same stencils are composed by the Vari-Typer.

The mimeograph stencil consists of three distinct parts: the waxed sheet that takes the impression; the tissue cushion sheet that absorbs the wax as it is impressed or struck by the type and the backing sheet.

The backing sheet is a fairly stiff piece of paper approaching the consistency of cardboard. The reason for this hard backing is readily apparent when we consider that the ordinary typewriter takes the type impression on a rubber platen. If the backing sheet were less stiff the type would have a rather difficult time to "cut" the stencil. You will see what is meant if you try this experiment. Lay a piece of rubber (a piece of inner tube will serve)

on a piece of cardboard. Now hold over this sheet rubber a circular die used to punch a hole. Strike the die a sharp blow with a hammer; the chances are that you will cut out the hole rather imperfectly.

Now try the experiment over again, using instead of a soft cardboard, a steel plate. Strike the die a sharp blow again. See the perfect hole in the sheet rubber. There must be "backing" to "cut" a hole in a substance that is not resistant to pressure.

The type striking the soft rubber platen of a typewriter would "dent" the stencil as well as the rubber platen---resulting in an imperfect "cut." The stiff backing sheet however is designed to give resistance to the blow of the typewriter type and the result is that the wax stencil is "cut."

A good typist on stencils is one who has the "feel" for stencil writing. That is, she strikes the typewriter keys blows sufficiently strong to "cut" just



enough without causing the "o's" to drop out. The operator must control her "stroke" so as to "cut" all letters of the alphabet uniformly. The little finger must be as strong as the index finger or the result is....poor typography.

Now, consider the "cutting" of a stencil with the Vari-Typer Composing Machine.

Here is a steel hammer striking Krometal type on a solid anvil. One can easily see that the wax sheet will be "cut"...cut all the way through the sheet.

Now the object of "cutting" stencils is to cut the wax out of the sheet BUT LEAVE THE DELICATE SILK FIBRES. If these fine fibres are cut through, the "o's" drop out and the periods are holes. These fibres hold the arms of the "E's" in place. They also hold the center of the "O" where it belongs.

Evidently what we need, to write stencils on the Vari-Typer, is not a backing sheet but a cushion sheet. If the two metals were permitted to meet, the result would be letters "cut" ...actually cut out. So we put a soft backing sheet on the wax sheet to cushion the blow.

Having the soft cushion in place it is now necessary to "cut" just enough and no more. We want the fine little fibres to remain intact. This is accomplished on the Vari-Typer by the impression

control lever at the left of the machine above the type keys, used in conjunction with the stencil light.

Turn on the light as you start to "cut" the stencil and note if the light is shining through uniformly and at the same time the fine fibres are left in place. If the blow is too light, that is, the light does not shine through the stencil uniformly increase the blow of the impression hammer. If the fibres are being cut, the stencil light will reveal this condition before it is too late. The light is so constructed that it can be turned on and left on while the stencil is being written and yet not annoy the operator. The shield can be turned so as to prevent the light from shining above the carriage.

Now just one more word about the writing of stencils on the Vari-Typer as compared with an ordinary typewriter.

The typewriter operator must control her striking of the type keys to approximate a fairly uniform "cutting." On the Vari-Typer the operator is relieved of this nerve racking restriction on her speed. The Vari-Typer does the printing...with a uniform blow...automatically regulated by the machine itself. The operator, in depressing the type key, merely releases a spring tension that causes the hammer

to print the letter desired. The machine automatically returns the hammer to a striking position, and the next letter is printed with the very same tension. The effect is that of a printing press that presses lead type against a steel table with a sheet of paper between them. The electric motor automatically rewinds the spring that gives the hammer the proper tension. The operator is oblivious of the fact that the typing is absolutely uniform. But once the stencil is put on the duplicating machine to "run off," the effect of "impression control" is seen. The

typography is uniformly black. There are no splotches where a period has "CUT THROUGH" and there are no "o's" dropped out. If the impression control lever has been set for the proper pressure the final duplicating job is a joy to behold.

Finally, the soft cushion backing sheet readily absorbs the wax that should be removed and at the same time gives a clearly legible proof-reading sheet.

Use the Vari-Typer standard backing sheet for the best results for writing stencils.

Instructions In The Use Of Duplimat And Duplex Metal Plates

METAL PLATE MECHANISM

To type direct to the Duplex (metal) plate it is necessary that the Vari-Typer Composing Machine be equipped with a metal plate mechanism, which operates as follows: With every stroke of the hammer, the ribbon shield is caused to move forward toward the type. This is done by making the ribbon shield yoke an integral part of the typing mechanism. This retractable shield permits the free moving of the carriage without

the danger of scratching the surface of the Duplex plate. Also the retractable shield tends to avoid the marking of the plate while typing, by shielding it from the type font; however, it is not necessary in doing DupliMAT work to have this mechanism. The DupliMAT depends upon a chemical ribbon and a chemically treated paper plate for reproduction by the Multigraph Puplicator. For this reason the master copy cannot



be rerun after a day or two, and forms that should be filed for later use should be done on the Duplex (metal) plate. It is advisable, therefore, to install

the metal plate mechanism on the Vari-Typer when the application is the Multigraph Duplicator.

SPLIT ROLLER

To successfully insert a DupliMAT or metal plate in the machine, a split roller is needed. This consists of a circular piece of wood approximately the diameter of a broom stick. It is about six inches longer than the carriage in which it is to be

used. The stick is split into two halves and hinged. A clamp closes the stick and locks it. The "jaws" of the stick are padded with rubber strips to insure the plate being held firmly while it is being rolled into the machine.

CARBON and INK RIBBONS

The standard Vari-Typer carbon paper ribbon is used to type on the metal plate. For the DupliMAT a special chemical

ribbon is needed. This chemical ribbon is supplied only by the Multigraph Duplicator manufacturers and their agents.

THE METAL PLATE

Until recently there have been on the market, two types of metal plates; one considerably thicker than the other. *The better one to use is the thinner of the two.* To insure getting the right weight ask for the "Vari-Typer"


Duplex Plate. These may be purchased from the manufacturer, the Addressograph-Multigraph Company. They are plainly marked "Vari-Typer" on the outside of the package.

INSERTING

Open the "jaws" of the split wooden roller and insert the metal plate or DupliMAT well toward the left side of the roller (*on the Duplex plates there is a white backing sheet attached to one end. This attached edge is the one to be inserted in the wooden roller.*) Close the wooden roller and clamp it securely. Open the feed rolls

of the Vari-Typer and insert the wooden roller into the basket, guiding the Duplex plate or DupliMAT with the left hand. Adjust the paper guides to hold the plate upright (*see that the clamp which locks the split roller extends far enough beyond the right end of the carriage so that it may be easily opened and closed*); roll the split



roller so that the writing surface is next to the roller and does not come in contact with the basket. The object is to get the plate rolled loosely around the split stick while it is being fed into the basket. Avoid rolling the plate too tightly. There should be the minimum of tension in the plate when it is down as far as it will go ready for typing. Check the alignment of the plate with the alignment bar. Open the feed rolls of the Vari-Typer *just enough* to release the plate so that it can be straightened in the machine if it is found necessary to adjust it. Because the plate is rolled loosely in the basket it may bind when the line spacer

is used. If this occurs turn the roller slightly in the same direction  it was originally rolled so that the circumference of the plate will be lessened around the split roller.

CAUTION: The best work is done when the plate is rolled loosely in the basket. It should follow the periphery of the basket rather than be tightly wound on the split stick. The purpose of the split roller is only to wind the plate rather than have it double back and forth, which causes it to bend and crease.

NOTE: Some operators prefer to roll the metal plate on the split roller first and then insert it in the machine.

TYPING

Typing on the metal plate and the DupliMAT is in all respects the same  ordinary composition. Use  suitable impression for each type, checking that the carbon or ink deposit is uni-


form. The erasing shield should be moved forward until it almost touches the plate. All fonts work equally well on both types of plates. A little practice will improve the final printing.

CORRECTIONS

Do not attempt to erase the "ghost" on a paper plate. All that is necessary is to remove the ink deposit. This should be done in three steps. One - remove the major part of the ink and clean your eraser, two - remove the rest of the ink being careful not to smudge the DupliMAT; three - clean the area of all remaining eraser shreds, ink, etc., remembering

that you need not remove the "ghost."

In retyping the correction, use the same impression as was used during the original typing.

To make corrections on the metal plate use  spun glass eraser. This can be obtained from the Multigraph Company.

In making corrections on a metal plate, rub the letter *with the*



grain of the plate, that is the long way of the plate rather

than the narrow direction.

NOTE

Do not make the work complicated. It is just as easy to type directly to the metal plate as it is to cut a stencil or type on paper. A little practice will convince you that excellent work can be done by following the instructions given here to the letter.

In composing a two or three column format it is best to type across the three columns rather

than complete the first column, then the second and then the third. Rolling and unrolling the plate will not improve its final appearance and might endanger the work that has been completed. Avoid as much as possible the necessity for rolling the plate in and out of the carriage. The watchword for good results is "HANDLE WITH CARE."

IN CONCLUSION

The two color ribbon attachment cannot be installed with the metal plate mechanism.

The metal plate may be used on both sides *by experts*. For the best results use only one side. After the plate is typed, daub with pink Platex (Green Platex will remove typing).

Put the plate on the duplicator and ink it until it starts to "tone". This seals the image on the plate.

When the impression is visibly deep (*see reverse side after typing*), smooth out the plate by

rubbing over the embossed characters on the reverse side. This can be done by using a smooth object (a "seam roller" used by paperhangers is good) and rolling carefully until reverse side is smooth. Be extremely careful that the typed side is laid against a clean, smooth surface (a piece of plate steel or plate glass) as the plate is liable to become scratched.

NEVER "RUB OUT" EMBOSSEMENT UNTIL REPELLANT HAS BEEN USED ON THE SURFACE OF THE PLATE.

BLUEPRINTING

Vari-Typing is done directly to pencil or ink tracing cloth for blue print reproduction. It is necessary to use a special ribbon-Copy-Craft #9 is recommended.

Gothic types are best for this work. Use a thin backing sheet. Corrections are made with a hard rubber eraser. In blueprinting paper speed must be determined.

Preparation for Photo-Offset

(In the Photo-Offset process, the material to be reproduced is simply photographed, a plate made, and then run off on a Photo-Offset press. Master copy prepared on the Vari-Typer and reproduced as above, cuts the cost of type set composition as much as 70%.)

1. Determine the number of characters per horizontal inch. The best way to do this is to count the number of characters in a two-inch horizontal space. Divide this by two to get the number of characters per horizontal inch. Do this in two different places, as the count will vary slightly. This will give the number of characters you must have in the finished copy.

2. Measure the copy you wish to reproduce for the number of vertical lines per inch. Again, the best way to do this is to compute, in a two-inch space vertically, the number of lines from the bottom of one line to the bottom of the line nearest the end of the two-inch area. Practice both these steps until you can accurately estimate the required horizontal and vertical spacing of any given copy.

3. Study the styles of types used in the original copy. Briefly, they will fall into one of two groups: the Print types, found on pages 4 to 16 of the Vari-Typer Faces; and the Gothic types, found on pages 17 to 25. Using the Type book for reference, select the types which will match as nearly as possible

the styles and sizes used on the original copy.

4. Having determined the horizontal and vertical spacings, and the types to be used, it is now necessary to decide how the Vari-Typer may be best employed. As you know, the Vari-Typer horizontal spacings are 10, 12, 14, 16 and 18 characters per horizontal inch. The vertical spacings are 9, 6, 4-1/2, 3-3/5, and 3 lines to the inch.

Now, if the required spacing, as found in step 1, is 16 characters to the horizontal inch, and the vertical spacing is, let us say, 6 or 1 lines per vertical inch, the job can be composed ACTUAL SIZE. If such is the case, proceed as follows:

(a) Clean the types to be used with a brush and alcohol. Also clean the rollers with alcohol, and wipe the ribbon shield with a clean cloth.

(b) For best results, use the carbon ribbon, rather than a cloth ribbon. The carbon ribbon attachment may be added to any standard machine. However, if a cloth ribbon is used, a silk one is recommended.

(c) Use #2 white ledger paper (20 lb.) for best results, with-



out ■ backing sheet. Varitype on the side through which the watermark of the paper may be read.

(d) Varitype the copy, making sure that you are getting sharp, complete characters. (In the case of ruled forms, it is advisable to rule up the form first, using a standard ruling pen and India ink - after practice you will be able to give your ruled forms lines of varying widths, which add greatly to the final appearance.) Always bear in mind the fact that the final copy can be only ■ good as the master copy you prepare.

(e) CORRECTIONS - never erase to make a correction in the master copy. Type or redraw the error and paste the correction over the incorrect portion, using ■ T square and a triangle to insure perfect alignment. Use Chinese white to paint out any part to be deleted. Never use glue in the paste-up of the master copy; you may want to remove the item. Use only rubber cement.

REDUCTION

If, after examining the original copy, it is found that part of the page is printed with 18 characters to the horizontal inch, and 8 lines to the vertical inch, while another part of the page is printed at 24 characters to the horizontal inch, and 12 lines to the vertical inch, it will then be necessary to Varitype the page at ■ determined size

and reduce it photographically to within the desired area.

Using the conditions just given as an example, proceed as follows:

1. Twenty-four characters per horizontal inch and twelve lines per vertical inch are required in the final copy. Upon examination of the printed page, let us say, it was found that the type closely resembled our President #250-10-12. Let us also assume that the original copy measures $5\frac{1}{2} \times 8\frac{1}{2}$.

2. President 250-10-12 must be written at 12 spacing. In the final copy we want it printed at 24. Make a fraction of these factors by putting *the spacing to be used (12) over the spacing required (24)* - or $12/24$. Reduce this to ■ simple fraction and you have $1/2$.

3. Using a logarithmic scale of proportions, place the shorter dimension (1) on the inner scale opposite the longer dimension (2) on the outer scale. Now, opposite the width of the *original* copy ($5\frac{1}{2}$) on inner scale, read the answer, or 11. This figure represents the width of the master copy you are to prepare. When reduced to $5\frac{1}{2}$ inches by the printer, the final copy will have 24 characters to the horizontal inch.

4. Using the same fraction, $1/2$, place the 1 on the inner scale opposite the 2 on the outer scale. Now, opposite the length of the original copy ($8\frac{1}{2}$) on the inner

scale, read the answer, or 17, the length of the new copy. Always check to see if the copy will fit vertically. Vary it if necessary, but you must change the copy proportionately.

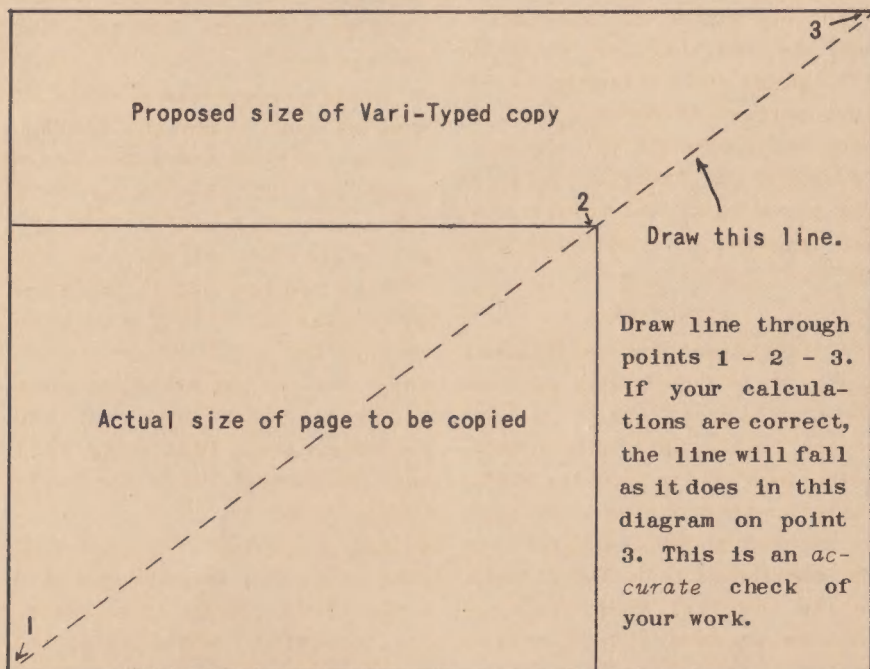
If instructed to figure copy at a percentage of reduction, $1/6$, for example, subtract $1/6$ from $6/6$, leaving $5/6$. Invert this to $6/5$; place 6 on outer scale opposite 5 on inner; then, opposite width of original copy on inner scale, read the new width for Vari-Typing.

In the event that there are several different spacings to be used on one page, it is practical to compose the job in sec-

tions, using the required spacings which may be different, *but the reduction for the entire sheet should be the same.* It is important, however, that when the composite parts are fitted together great care is used in pasting up. On jobs larger than $8\frac{1}{2} \times 11$, it is advisable to paste up your "galley" or columns of copy, on a large sheet of cross-section ruled paper.

For type sizes larger than available, use paper letters and paste them direct to your master copy. These letters are furnished by the Fototype Company of Chicago, Ill.

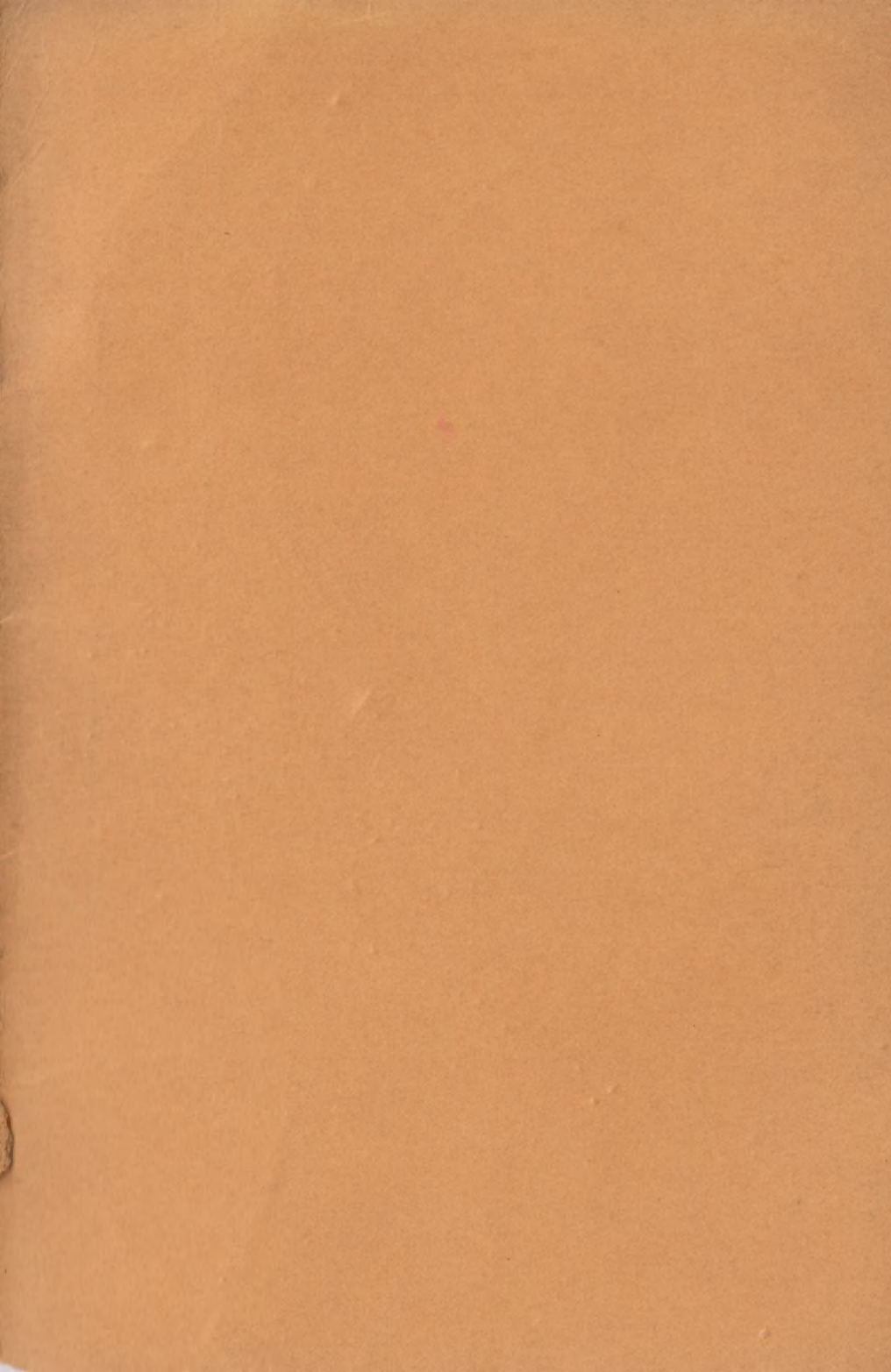
TO CHECK YOUR COMPUTATIONS FOR REDUCTION





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Lithographed actual size in the U. S. A.
Composed on the Vari-Typer